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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/689,835	10/22/2003	Susumu Ninomiya	052218-0105	4242
22428	7590	11/14/2007	EXAMINER	
FOLEY AND LARDNER LLP			MORILLO, JANEL COMBS	
SUITE 500			ART UNIT	
3000 K STREET NW			PAPER NUMBER	
WASHINGTON, DC 20007			1793	
			MAIL DATE	DELIVERY MODE
			11/14/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/689,835

Applicant(s)

NINOMIYA, SUSUMU

Examiner

Janelle Combs-Morillo

Art Unit

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,6,12-28,32 and 36 is/are pending in the application.
- 4a) Of the above claim(s) 13-28,32 and 36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,6 and 12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 1, 2007 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kemper (US 4,030,947) in view of "Aluminum and Aluminum Alloys" p 321.

Concerning process claim 1, Kemper teaches a method of heat treating an aluminum alloy (column 4 line 45) by solution heat treating in a fluid media such as molten salt (column 3 lines 17-18, 30, 65), followed by quenching in a fluid quenching media, such as molten salt (column 3 lines 35-36, 65) optionally diluted with water (Table 1) and maintained at a temperature of 350°F (177°C, column 6 line 67), followed by artificially aging at 250°F (column 7 line 23). Kemper teaches said molten salt media can be sodium nitrate, potassium nitrate, mixtures of said salts (column 3 lines 65-67) at typically temperatures of 750-1000°F (column 2

lines 20-22, 399-538°C), which substantially overlaps the presently claimed 1st temperature minimum. Kemper teaches cooling to 177°C, but does not mention the quenching/cooling temperature suppresses growth of a GP Zone while in the solid solution state. However, because said temperature overlaps the instantly claimed temperature range of <200 °C, said GP Zones are held to be inherently suppressed.

Concerning the instant amendment inserting the transitional phrase “consisting essentially of” when referencing a first liquid, “consisting essentially of”, limits the scope of a claim to the specified materials or steps “and those that do not materially affect the basic and novel characteristic(s)” of the claimed invention. In re Herz, 537 F.2d 549, 551-52, 190 USPQ 461, 463 (CCPA 1976). For the purposes of searching for and applying prior art under 35 U.S.C. 102 and 103, absent a clear indication in the specification or claims of what the basic and novel characteristics actually are, “consisting essentially of” will be construed as equivalent to “comprising.” See, e.g., PPG, 156 F.3d at 1355, 48 USPQ2d at 1355. The applicant has not shown that the addition of oils or water taught by the prior art would affect the basic and novel properties of said alloy.

Kemper does not specify cleaning or further cooling with water (after cooling down to 350°F in said salt bath), however, “Aluminum and Aluminum Alloys” teaches at p 321 that salt baths/furnaces are efficient at heating and cooling, but salt residue must be rinsed with water after quenching in order to prevent corrosion (p 321, 3rd column). It would have been obvious to one of ordinary skill in the art to rinse the salt residue after cooling down to 350°F in said salt bath, with water (which would cool said higher temperature alloy) in order to prevent corrosion, substantially as taught by “Aluminum and Aluminum Alloys”.

Concerning claim 6, though Kemper does not mention the lattice defect or the miniaturization of the crystal structure, because Kemper teaches a substantially identical process as presently claimed, then said grating defect and miniaturization of the crystal structure are held to be inherently present.

4. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kemper and "Aluminum and Aluminum Alloys" further in view of Reimann (US 3,947,297).

Neither Kemper nor "Aluminum and Aluminum Alloys" mention rolling after aging. However, Reimann teaches that cold working by rolling (column 2 line22) after aging achieves excellent mechanical properties (Table II). It would have been obvious to one of ordinary skill in the art to roll the alloy taught by Kemper and "Aluminum and Aluminum Alloys" after aging, because Reimann teaches that said rolling after aging achieves excellent mechanical properties (Table II).

Response to Amendment

5. In the response filed on October 1, 2007 applicant amended claim 1, and submitted various arguments traversing the rejections of record. Claims 1, 6, 12-28, 32, 36 are currently pending, claims 13-28, 32, 36 are withdrawn from consideration.

6. Applicant's argument that the present invention is allowable over the prior art of record because Kemper fails to disclose or suggest heating the nonferrous metal alloy to 450-530°C by a first liquid metal sodium, followed by cooling to a temperature <200°C in a second liquid metal sodium has not been found persuasive. As stated in the rejection above, Kemper teaches heating in a molten salt media (which comprises liquid metal sodium) to temperatures of 399-538°C followed by cooling to 177°C in molten salt media (column 2 lines 19-21).

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janelle Combs-Morillo whose telephone number is (571) 272-1240. The examiner can normally be reached on 8:30 am- 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JCM
November 7, 2007

ROY KING
SUPERVISORY PATENT EXAMINER
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